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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,821	08/23/2005	Eiji Toda	05174/LH	7730

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EXAMINER	
MCGOWAN, JAMIE LOUISE	
ART UNIT	PAPER NUMBER
3671	

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05/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,821	TODA ET AL.	
	Examiner	Art Unit	
	JAMIE L. MCGOWAN	3671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11* is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/12/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION
Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda (JP09060047) in view of Adachi et al. (2003/01544091).

Regarding claims 1 and 6, Yasuda discloses an apparatus and method for controlling a hydraulic pump for a working machine of a working vehicle having a cylinder arrangement for operating a working machine, wherein the variable displacement hydraulic pump supplies oil at a specified pressure to said cylinder arrangement and said cylinder arrangement comprises a plurality of cylinders, comprising a bottom pressure detector that outputs a detection signal that detects the bottom pressure of the boom cylinder. When it is detected that the boom cylinder is being driven, the controller limits the oil discharge flowing quantity of the pump. When a pressure is detected in the bottom side of the boom cylinder, a regulator (i.e. controller) sends a signal to the displacement control device to limit the pump output of pressure oil.

While Yasuda discloses the apparatus and method above, it fails to disclose that the controller regulates the pressure oil after it is determined that an excavating operation has started based on the detection of a predetermined time elapsing at a certain detection level. Like Yasuda, Adachi et al. also discloses controlling an excavating machine. Unlike Yasuda, Adachi discloses that the information from a pressure detector is used to determine if the machine is actually performing substantial excavating work. Adachi teaches that a signal can be sent after the detector detects a predetermined pressure above a threshold after a certain amount of time has elapsed (Paragraph 0042). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to include the time sensitive pressure detection system of Adachi et al. in the device of Yasuda to more efficiently control the pressure oil in the system so as to only actuate changes when the machine is actually being used for excavating operations.

3. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda (JP09060047) in view of Adachi et al. (2003/01544091) as applied to claim 1 above, and further in view of Izumi (EP0462589) (cited by applicant).

Regarding claims 2 and 7, the combination of Yasuda and Adachi et al. discloses the device as described above, but fails to specifically disclose the step/device for determining that the excavating operation is finished. Like the combination of Yasuda and Adachi et al., Izumi also discloses a system/apparatus for controlling a hydraulic pump of an earth working vehicle. Unlike the combination, Izumi further discloses a load sensing hydraulic drive circuit that reduces the displacement of the hydraulic pump to the predetermined value when the load is no longer sensed (the load would not be present if the machine were pushing a pile of material in a forward direction and then moved into a neutral or reverse direction). Izumi teaches that using a load sensing hydraulic drive circuit allows for more efficient operation of the system because the hydraulic pump is controlled dependent on the load pressure and is not required to use all of its energy when the load is small or non existent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the load sensing system of Izumi in the apparatus/method of the combination of Yasuda and Adachi et al. to provide a more power efficient system.

4. Claims 3, 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda (JP09060047) in view of Adachi et al. (2003/01544091) as applied to claim 1 above, and further in view of Takeuchi (DE3823283) (cited by applicant).

While the combination of Yasuda and Adachi et al. discloses the device as described above, it fails to specifically disclose a step/apparatus of determining that the excavating operation is finished when the load on the bottom side is reduced and then reducing the displacement of the pump when it is so determined that the excavating operation is finished. Like the combination of Yasuda and Adachi et al., Takeuchi also discloses a control system for a variable displacement pump. Unlike the combination, Takeuchi further discloses that when there is a pressure change, a detection mechanism signals the pump to increase or decrease its displacement based on the given condition after a predetermined time. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the pump displacement control of Takeuchi in the device of the combination of Yasuda and Adachi et al. to determine when the excavating operation is finished in order to run more efficiently by using less power when no load is sensed.

5. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda (JP09060047) in view of Adachi et al. (2003/01544091) as applied to claim 1 above, and further in view of Duell et al. (6,312,209).

While the combination of Yasuda and Adachi et al. discloses the device as described above, it fails to disclose a bucket height detector for detecting the height of the bucket to determine when excavation has ended. Like the combination, Duell et al. also discloses a control system for a variable displacement hydraulic pump. Unlike the combination, Duell et al. further discloses using a height sensor to increase and decrease the displacement of the pump. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the height sensor of Duell et al. in the device of the combination of Yasuda and Adachi et al. to determine when the excavating operation is finished in order to run more efficiently by using less power when no load is sensed.

Allowable Subject Matter

6. Claim 11 is allowed.

Response to Arguments

7. Applicant's arguments filed 2/12/09 have been fully considered but they are not persuasive. Applicant argues that Yasuda fails to disclose determining a displacement of a hydraulic pump relative to the determination that an excavating operation has started. The examiner disagrees. Yasuda discloses (paragraph 0009) that once it is detected that a load has been placed on the boom by the bottom pressure detectors of the boom cylinder, a first setting means (i.e. a controller) sets a first target displacement based on the pressure in the boom cylinder. The first pump control means (i.e. controller) then controls the displacement of the pump by either reducing or increasing it according to the target displacement. If the controller were not determining the current displacement of the pump during this process, it would not be able to effectively move the pump to the desired target displacement. Since the controller effectively moves the pump to the target displacement, it must therefore be able to determine the initial pump displacement when the excavating operation has started in order to determine that it has to act to move it to the target displacement. Further, it is noted that Yasuda discloses the use of two target displacement that allows the controller to select the displacement required for the operation at hand (Paragraph 0009). This capability, like the claimed invention, allows the controller to either reduce or increase pump displacement, to effectively reduce the loss of power when changing operation to provide for a more effective operation.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMIE L. MCGOWAN whose telephone number is (571)272-5064. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on (571)272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas B Will/
Supervisory Patent Examiner
Art Unit 3671

JLM
May 8, 2009